

Idle-Reduction Technologies

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Topics Covered

- U.S. DOT Interest In and Support of Idle-Reduction Projects
- Extent and Impact of Idling
- Alternatives to Idling
- Other Issues

National Energy Plan

- DOT and EPA are directed to develop ways to reduce petroleum consumption by working with the trucking industry to establish a program to reduce emissions and fuel consumption for long-haul trucks at truck stops by implementing alternatives to idling, such as electrification and auxiliary power units at trucks stops along Interstate Highways.

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Why Do We Care?

- NOx emissions from HDDVs have increased over 100% in the last 30 years
- EPA's new ozone and PM standards
- Transportation sector energy use will increase 61% by 2020
- Driver safety
- Climate Change – GHG reduction strategy
- Emerging Issues – Mobile Source Air Toxics

What's the Impact of Idling Trucks?

- 500,000 -1 million heavy-duty idling trucks
- Average idle/rest period: 1800-2400 hrs/yr
- Why: Cab comfort, power for auxiliaries, engine/oil warmth, safety & habit
- Locations: truck stops, rest areas, company terminals, ports, borders, and near drop-off/pick up location
- Emissions: 11 million tons of CO₂, 150,000 tons of NOx, 1 billion gallons diesel fuel wasted

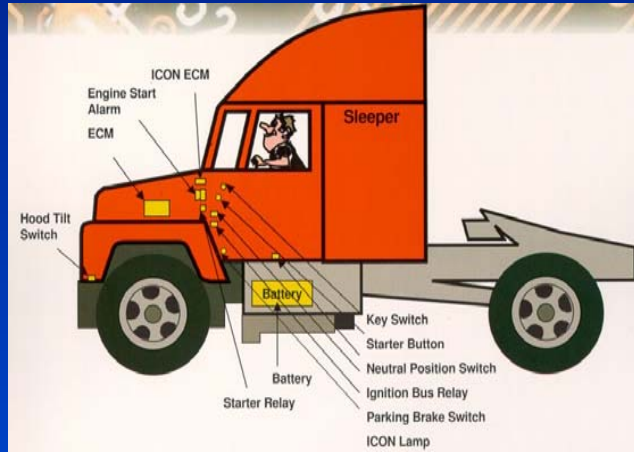
What Are the Alternatives?

- Mobile Solution

Auxiliary Power Units



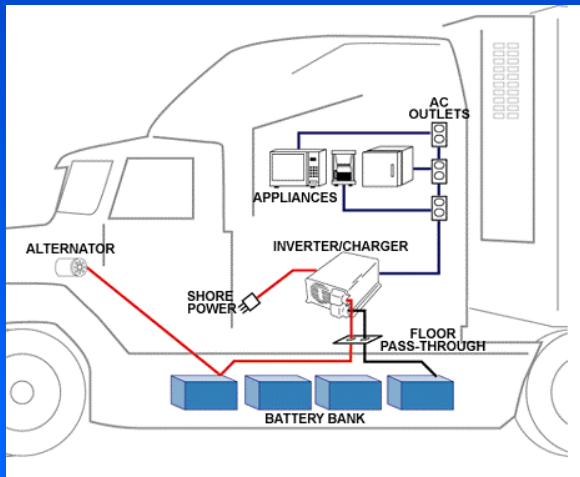
Automatic Engine Idle Systems



Direct Fired Heaters

- Stationary Solution

Truck Stop Electrification (Shorepower)



Advanced TSE

Alternatives to Idling

Technology	Initial Cost	Operating Charge	Fuel Savings/yr (@\$1.50/gal.)	Maintenance Savings/yr	Emission Reductions (g/hr)			Cost Per Ton Effectiveness
					NOx	PM	CO ₂	
Direct-Fired Heater	\$1-2K/unit	0	\$1,152	\$513	99%	98%	95%	-
Automatic Engine Idle	\$1-2K/unit	0	\$1,350	\$1,026	N/A			-
APU	\$5-7K/unit	0	\$2,880	\$1,339	94%	80%	74%	\$2,500/ton NOx
TSE (Shore Power)	\$2.5K/ parking space; \$2.5K/truck modification	\$3,000 annual usage fee/truck (\$1.00-\$1.50/hr)	\$3,600	\$1,539	93%	80%	54%	\$2,688/ton NOx
Advanced TSE (Rental)	\$10K/ parking space	\$3,000 annual usage fee/truck (\$1.00-\$1.50/hr)	\$3,600	\$1,539	93%	80%	54%	\$2,688/ton NOx

Other Issues

- “CMAQ Eligibility for Idle-Reduction Measures” policy guidance:
 - ✓ <http://www.fhwa.dot.gov/environment/cmaqpgs/index.htm>
- EPA “Guidance for Quantifying and Using Long Duration Truck Idling Emission Reductions in State Implementation Plans and Transportation Conformity”:
 - ✓ <http://www.epa.gov/smartway>
- DOT/EPA/DOE Activities:
 - ✓ Regional Idle-Reduction Implementation Workshops – I-95 Corridor
 - ✓ National Idling Reduction Planning Conference – Albany, NY

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